



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,349	04/09/2004	Karl Schrodinger	MAIKPI72US	9998
51092 7590 11/16/2007 ESCHWEILER & ASSOCIATES LLC 629 EUCLID AVENUE, SUITE 1000 NATIONAL CITY BUILDING CLEVELAND, OH 44114			EXAMINER WONG, LINDA	
			ART UNIT 2611	PAPER NUMBER
			NOTIFICATION DATE 11/16/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docketing@eschweilerlaw.com

## Office Action Summary

Application No.

10/821,349

Applicant(s)

SCHRODINGER, KARL

Examiner

Linda Wong

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,9-13,15-17 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 3-8,14,18,19 and 23-27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

***Response to Arguments***

1. Regarding claims 20-22, applicant's arguments filed 08/30/2007 have been fully considered but they are not persuasive.

- a. The applicant contends "Komori does not teach a data signal subjected to autocorrelation and the correlation signal being averaged over time, as recited in claim 20." The examiner respectfully disagrees. Paragraph 186 discloses

"The output signal acre of the auto-correlation circuit 20901 is input directly to the moving average circuit 20912 and after delayed by the amount of 48 clocks via the delay unit 20906, averaged (integrated), and input to the absolute value calculation circuit 20917". Paragraph 0189 discloses "Further, the output signal acre of the auto-correlation circuit 20901 is input directly to the moving average circuit 20910 and after delayed by the amount of 32 clocks via the delay unit 20904, averaged (integrated), and input to the frequency error detection circuit 20926."

Komori discloses in both paragraphs the autocorrelation output is inputted into a moving average circuit, wherein a moving average circuit averages the autocorrelation output within a period of time and the period of time is constantly moved.

2. Based on the rebuttal as stated above, the rejection of claims 20-22 stand as stated previously.
3. Applicant's arguments, see Applicant's Remarks, filed 08/30/2007, with respect to the rejection(s) of claim(s) 1-2,9-13,15-17 under Yu et al have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Palenius.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 20,21,22** are rejected under 35 U.S.C. 102(e) as being anticipated by

Komori et al (US Publication No.: 20040037378) will be used as translation.

(Please note the US Publication has a filing date of 8/4/2003 and has a priority date of June 25, 2002, wherein the PCT Publication was published on 1/03/2003.)

a. **Claim 20,**

i. Komori et al discloses

- o "subjecting the data signal to autocorrelation such that at least one digital correlation signal is formed" (Fig. 1, labels 101,104,105, paragraphs 0150,0164,0168)
- o "subjecting the at least one digital correlation signal to averaging over time" (paragraph 0164,0167,0168 discloses the burst detection determines the amount of burst and correlates the delayed signal with the data signal for the period, wherein the period incorporates the front half 5 periods and rear half 5 periods and

- "utilizing the time mean value to produce a data rate measurement signal which characterizes the data rate of the data signal". (By calculating the average of the data bursts within periods as disclosed in paragraphs 0164,0167,0168, the data rate, which is the calculation of amount of data within a period or time cycle is calculated. Since the calculation as disclosed in paragraphs 0164,0167,0168 is determined using the amplified signal as shown in Fig. 1, labels 101,104,105, the data rate is determined using the amplified data signal.)

b. **Claim 21,**

i. Komori et al discloses

- "phase-shifting the data signal, thereby forming at least one phase-shifted auxiliary signal", (Fig. 1, label 104) and
- "correlating the data signal and the at least one phase-shifted auxiliary signal to form the at least one correlation signal". (Fig. 1, label 104,105, paragraphs 0150,0164,0167,0168)

c. **Claim 22,**

i. Komori et al discloses

- "using the time mean value of the at least one correlation signal to produce a binary threshold value signal which indicates whether the time mean value of the at least one correlation signal is less than or greater than a predetermined threshold value" (Fig. 11, label 20921 compares the autocorrelation to some value)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1,11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Palenius (US Patent No.: 6904290).

a. **Claim 1**, Palenius discloses

- “at least one amplifier device for amplification of a data signal which is applied to an input terminal of the receiver circuit” (Fig. 3, label 32) and
- “a control device for measuring a data rate of the data signal, and for setting a bandwidth of the amplifier device such that the bandwidth of the amplifier device corresponds to the data rate of the data signal”. (Fig. 3, label 28 for measuring the BER and/or FER (Col. 5, lines 18-20), which are quality measurements for determining the data rate (Col. 5, lines 42-43, Fig. 7, label 700). It is well known in the art and disclosed by the prior art by adjusting the power level needed for transmission through a particular physical channel, the bandwidth of the amplifier is adjusted as well. Col. 3, lines 43-45 discloses determining a data rate so to adjust the transmit power or power level. Col. 4, lines 35-44 discloses different number of physical channels are allocated to physical channel (either downlink or uplink). The data rate may be different on the downlink and uplink. The

bandwidth requirement for a downlink channel maybe different from an uplink channel. Thus, steps must be taken to ensure the right amount of data is transmitted through a particular physical channel. Col. 4, lines 48-55 discloses a power level is associated with each physical channel. From the information as indicated above, transmission through a physical channel requires adjusting the power level to a particular level associated with a specific physical channel. Each physical channel allows a certain amount of data or bandwidth to be transmitted. In order to transmit through the particular channel, the power level is adjusted so to transmit the required bandwidth of data at the specified data rate as determined (Fig. 7, label 700)) Thus, based on the prior art's disclosure, it would have been obvious to one skilled in the art to adjust the power level of the amplifier, which in turn adjusts the bandwidth of the amplifier device, so to transmit the required amount of data through a particular physical channel with specific requirements without using excess power.

b. **Claim 11**, Palenius discloses

- “amplifying a data signal using an amplifier device to form an amplified data signal” (Fig. 3, label 32)
- “measuring a data rate of at least one of the data signal and the amplified data signal, and (Fig. 3, label 28, Fig. 7, label 700)
- “setting a bandwidth of the amplifier device such that the bandwidth of the amplifier device corresponds to the measured data rate”. (It is well known

in the art and disclosed by the prior art by adjusting the power level needed for transmission through a particular physical channel, the bandwidth of the amplifier is adjusted as well. Col. 3, lines 43-45 discloses determining a data rate so to adjust the transmit power or power level. Col. 4, lines 35-44 discloses different number of physical channels are allocated to physical channel (either downlink or uplink). The data rate may be different on the downlink and uplink. The bandwidth requirement for a downlink channel maybe different from an uplink channel. Thus, steps must be taken to ensure the right amount of data is transmitted through a particular physical channel. Col. 4, lines 48-55 discloses a power level is associated with each physical channel. From the information as indicated above, transmission through a physical channel requires adjusting the power level to a particular level associated with a specific physical channel. Each physical channel allows a certain amount of data or bandwidth to be transmitted. In order to transmit through the particular channel, the power level is adjusted so to transmit the required bandwidth of data at the specified data rate as determined (Fig. 7, label 700)) Thus, based on the prior art's disclosure, it would have been obvious to one skilled in the art to adjust the power level of the amplifier, which in turn adjusts the bandwidth of the amplifier device, so to transmit the required amount of data through a particular physical channel with specific requirements without using excess power.



Art Unit: 2611

6. **Claims 2,12,13,15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Palenius as applied to claim 1, in view of Komori et al (US Publication No.: 20040037378).

a. **Claim 2,**

i. Palenius fails to disclose

A. "a data correlator having an input terminal connected to said at least one amplifier device such that the data correlator receives a received signal including one of the data signal and an amplified data signal, which has been amplified by the amplifier device"

B. "the data correlator includes means for generating, in response to the received data signal, at least one phase-shifted auxiliary signal"

C. "the data correlator also includes means for subjecting the received data signal and the at least one phase-shifted auxiliary signal to correlation"

D. "the data correlator also includes means for producing at least one correlation signal, which corresponds to the autocorrelation, on an output terminal of the data correlator".

ii. Komori et al discloses such limitations. (**Limitation A:** Fig. 1, label 105, Fig. 2, label 209, Fig. 1, output from amplifier label 101, Fig. 2, output from label 201, **Limitation B:** Fig. 1, label 104 delays the amplified signal such that the delay would have a different phase from the input to the delay, Fig. 2, label 208, **Limitation C:** paragraphs 16,17,150,164,168 and **Limitation D:** Fig. 1, label s105, Fig. 2, label s209w) It would have been obvious to

one skilled in the art at the time of the invention to incorporate data correlator as disclosed by Komori et al into Palenius' invention so to provide an automatic gain control circuit able to realize high speed, accurate level acquisition and prevent error. (paragraph 27)

**b. Claim 12,**

**i. Komori et al discloses**

- "forming at least one digital correlation signal by subjecting said one of the amplified data signal and the data signal to autocorrelation" (Fig. 1, labels 101,104,105, paragraphs 0150,0164,0168)
- "averaging the at least one digital correlation signal over time" (paragraph 0164,0167,0168 discloses the burst detection determines the amount of burst and correlates the delayed signal with the data signal for the period, wherein the period incorporates the front half 5 periods and rear half 5 periods), and
- "utilizing the time mean value to produce a data rate measurement signal which characterizes the data rate of said one of the amplified data signal and the data signal" (By calculating the average of the data bursts within periods as disclosed in paragraphs 0164,0167,0168, the data rate, which is the calculation of amount of data within a period or time cycle is calculated. Since the calculation as disclosed in paragraphs 0164,0167,0168 is determined using the amplified signal as shown in Fig. 1, labels 101,104,105, the data rate is determined using the amplified data signal.) It

would have been obvious to one skilled in the art to incorporate data correlator as disclosed by Komori et al into Palenius' invention so to provide an automatic gain control circuit able to realize high speed, accurate level acquisition and prevent error. (paragraph 27)

c. **Claim 13,**

i. Palenius fails to disclose

A. "for ming at least one phase-shifted auxiliary signal by phase-shifting said one of the amplified data signal and the data signal" and

B. "correlating said on e of the amplified data signal and the data signal and the at least one phase-shifted auxiliary signal, thereby forming the at least one correlation signal"

- ii. Komori et al discloses such limitations. (**Limitation A:** Fig. 1, label 104 and **Limitation B:** Fig. 1, label 104,105, paragraphs 0150,0164,0167,0168) It would have been obvious to one skilled in the art to incorporate data correlator as disclosed by Komori et al into Palenius' invention so to provide an automatic gain control circuit able to realize high speed, accurate level acquisition and prevent error. (paragraph 27)

d. **Claim 15,**

i. Palenius fails to disclose

- "using the time mean value of the at least one correlation signal to produce a binary threshold value signal which indicates whether the time mean

value of the at least one correlation signal is less than or greater than a predetermined threshold value”

- ii. Komori et al discloses such a limitation. (Fig. 11, label 20921 compares the autocorrelation to some value) It would have been obvious to one skilled in the art to incorporate such a limitation as disclosed by Komori et al into Palenius’ invention so to provide an automatic gain control circuit able to realize high speed, accurate level acquisition and prevent error. (paragraph 27)

7. **Claims 16,17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Palenius in view of Komori et al as applied to claim 15, further in view of Ciccarelli (US Publication No.: 20040142670).

a. **Claim 16,**

- i. Palenius in view of Komori et al fails to disclose
  - “forming the time mean value of each of the at least one correlation signals using a low pass filter”.
- ii. Ciccarelli discloses such a limitation. (Fig. 1, label 122) It would have been obvious to one skilled in the art at the time of the invention to incorporate a low pass filter to filter the correlation signal as disclosed by Ciccarelli into Palenius in view of Komori et al’s inventions so to filter any noise or interference found in the correlation signal.

b. **Claim 17,**

- i. Komori et al discloses "forming the threshold value signal using a comparator, by applying the time mean value of the correlation signal as well as the predetermined threshold value to said comparator. (Fig. 11, label 20921, output from 20917 as the correlation signal and output from label 20919 as the predetermined threshold value.)"

8. **Claims 9,10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Palenius as applied to claim 1, in view of Ciccarelli (US Publication No.: 20040142670).

a. **Claim 9,**

- i. Palenius fails to disclose "a switching apparatus for switching the noise and for varying the noise response of the amplifier device".
- ii. Ciccarelli discloses such a limitation. (Fig. 4, claim 21, Fig. 9, label 902, paragraph 32-35) It would be obvious to one skilled in the art to incorporate such a limitation into Palenius' invention so to reduce the power of consumption in an amplifier.

b. **Claim 10,**

- i. Palenius fails to disclose "the switching apparatus comprises means for optimizing a sensitivity of the receiver circuit by at least one of switching and varying an operating point of the amplifier device".
- ii. Ciccarelli discloses such a limitation. (Fig. 4, claim 21, Fig. 9, label 902, paragraph 32-35) It would be obvious to one skilled in the art to incorporate

Art Unit: 2611

such a limitation into Palenius' invention so to reduce the power of consumption in an amplifier.

***Allowable Subject Matter***

9. **Claims 3-8,14,18-19,23-27** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Linda Wong  
11/7/2007

  
DAVID C. PAYNE  
SUPERVISORY PATENT EXAMINER